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ABSTRACT

This paper proposes a metaphoric perspective based on chaos theory for strategic planning by institutions of higher education. It offers 10 propositions for planning: (1) the ideal outcome of planning is planning, not a plan; (2) planning begins with a distillation of the institution's key values and purposes; (3) the widest possible universe of information should be made available to all members of the institution and should include ongoing feedback; (4) dissent and conflict are creative, healthy, and real; (5) linearity doesn't work in strategic planning, dictation, or collation; (6) the institution should budget fiscally and psychically for failure; (7) the considerable expense of time on the front end is an investment which is recouped, with interest, in the future; (8) the executive is not demoted or minimized but ultimately is empowered by the planning process; (9) that which can be quantified is not to be overvalued, and that which cannot be quantified is not to be discounted; and (10) the future is a creation, not a prediction; this power of agency is the distinguishing context of human chaotic systems. These propositions are applied to case studies of four diverse institutions: Blue Ridge Community College (Virginia), Carson-Newman College (Tennessee), the University of Calgary (Alberta), and Red Deer College (Alberta). (DB)

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Planning in Higher Education: A Model from Chaos Theory

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the annual conference of the
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Abstract

This paper argues that metaphor is essential to our conception of and life in organizations; that the dominant organizational metaphor of life within universities, particularly from an administrative perspective, is Newtonian/mechanical; and that a metaphoric perspective grounded in chaos theory might be helpful to us in approaching the specific institutional function of planning. Put forward are 10 propositions derived from a coincident consideration of chaos theory, and of classic and progressive prescriptions for strategic planning. These propositions are then examined in the context of planning experiences at four diverse institutions. The propositions and the descriptive enrichment they receive through the case-study experiences form an extended metaphor, a model, which provides a conceptual coherence for successful practices in strategic planning, and therefore a general, prescriptive approach for institutions embarking on planning efforts.

Some of the ideas in this paper were developed or explored in previous papers by the author, particularly "The implications of chaos theory for strategic planning in higher education," Great Lakes/Midwest regional conference of the Society for College and University Planning, March 1996; "Planning in higher education and chaos theory: A model, a method," Education Policy Research Conference, Wolfson College of Oxford University, March 1997; and "A Chaos-Theory Metaphor for Strategic Planning in Higher Education: An Exploratory Study," an unpublished doctoral dissertation, the University of Tennessee, Knoxville, May, 1999.

Planning in Higher Education: A Model from Chaos Theory

Strategic Planning in Higher Education: Mixed Results

Strategic planning in higher education received an early definition and a strong boost from George Keller with the publication in 1983 of *Academic Strategy: The Management Revolution in American Higher Education*. The author later estimated that while no more than a dozen of 3400 colleges and universities nationwide were engaged in strategic planning at the time of the book's publication, a decade later perhaps a quarter of those institutions were engaged in strategic thinking and acting. Yet he also acknowledged that a considerable number of initial efforts had failed (Keller, 1993). Jones (1990) was more pointed. His estimate was that for every three institutions which had initiated a planning process in the 1980s, two had fallen away from it and had gone back to "business as usual" (p. 52). A study published in 1994 by the American Council on Education (Schuster, Smith, Corak, and Yamada), inspired by Keller's work and seeking to examine the state of strategic planning as evidenced on eight campuses Keller had originally studied, found mixed results from strategic planning efforts and some outright failure.

Strategic planning enjoys a longer and more storied history in the corporate setting than in higher education, and so Henry Mintzberg's publication in 1994 of *The Rise and Fall of Strategic Planning* is of interest. Mintzberg suggested that the mid-90s were an appropriate time for the publication of the book and his prescriptions for strategic planning's revival. Had he published earlier, he felt, his points might well have been lost in the 1980s' backlash against strategic planning.

Of course, considerations of the limitations, failures, and cultural conflicts of planning and related issues within higher education predate Keller and the economic conditions of the 1980s which pressed consideration of institutions' market placements. Cohen and March, in their 1974 classic *Leadership and Ambiguity*, noted that the many presidents they interviewed voiced virtually unanimous support for the importance of planning and the idea that central responsibility for such planning resided within the office of the president. Yet Cohen and March determined four categories of answers when these same presidents were pressed for their plans (p. 113):

> 1. Yes, we have a plan. It is used in capital projects and physical location decisions.
> 2. Yes, we have a plan. Here it is. It was made during the administration of our last president. We are working on a new one.
> 3. No, we do not have a plan. We should. We are working on one.
> 4. I think there's a plan around here someplace. Miss Jones, do we have a copy of our comprehensive 10-year plan?

Cohen, March, and Olsen tied such patterns of institutional action and culture into their "garbage can" and "organized anarchy" models of institutional choice and decision making. Problems, solutions, participants, and choice opportunities were conceived and described as a rather random mix given to uneven results and low predictability (Cohen & March, 1974; Cohen, March, & Olsen, 1972).

Karl Weick described educational systems, including universities, as "loosely coupled systems" (1976), reminiscent of Cohen, March & Olsen's "uncoupling of problems and choices" (1972, p. 16) in garbage-can decision making, rather than as tightly controlled, centrally managed organizations. Weick identified advantages to such systems. Loose coupling can allow an organization to be more sensitive to environmental changes and able to adapt to them, as well as having lower administrative costs. Although Weick noted in 1976 that loose coupling "baffled and angered" (p. 4) administrators in their central planning activities and resulting expectations that an organization could be changed by such planning, he later expressed further and more detailed concern that loose coupling had frequently been conceptualized as a diametric opposite to management of organizations and was often cited as a cause of perceived resistance to change (Orton & Weick, 1990). Keller (1983), indeed, considered the conditions of garbage-can decision making and loose coupling to be crises, not elements of flexibility and adapt-

ability, for the then-emerging era of harsh competition for resources.

Explicit or implicit within these frameworks and perspectives are metaphors of the nature of organizations and our lives within them. This paper argues that metaphor is essential to our conception of and life in organizations; that the dominant organizational metaphor of life within universities, particularly from an administrative perspective, is Newtonian/mechanical; and that a metaphoric perspective grounded in chaos theory might be helpful to us in approaching the specific institutional function of planning. Put forward are 10 propositions derived from a coincident consideration of chaos theory, and of classic and progressive prescriptions for strategic planning. These propositions are then examined in the context of planning experience at four diverse institutions. The propositions and the descriptive enrichment they receive through the case-study experiences form an extended metaphor, a model, which provides a conceptual coherence for successful practices in strategic planning, and therefore a general, prescriptive approach for institutions embarking on planning efforts.

The Importance of Metaphor, Our Dominant Metaphor , and An Alternative

The importance of metaphor in our conceptions of the world and our organizations should not be underestimated or considered a mere poetic tool of discussion. Since at least Plato's allegory of the cave, metaphor has played a significant role in our descriptions of the world around us. Philosopher Mark Johnson and linguist George Lakoff, in their collaborative *Metaphors We Live By* (1980), assert that metaphor is inseparable from our conceptualizations of the world and our organization of it:

> [M]etaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature (p. 1).

Further,

> We draw inferences, set goals, make commitments, and execute plans, all on the basis of how we in part structure our experience, consciously and unconsciously, by means of metaphor (p. 158)

A metaphor for an organization or its processes, then, has utility for shaping our very conceptions of the organization. As Gareth Morgan wrote in the first edition of his book, *Images of Organization*:

> Metaphor is often just regarded as a device for embellishing discourse, but its significance is much greater than this. For the use of a metaphor implies a way of thinking and a way of seeing that pervade how we understand our world generally.... [M]etaphor exerts a formative influence on science, on our language and on how we think, as well as on how we express ourselves on a day-to-day basis (1986, pp. 12-13).

Morgan (1986, 1997) and many other knowledgeable analysts of organizational life (e.g. Wheatley, 1992; Zohar, 1997), as well as researchers in education (e.g. Lincoln and Guba, 1985) conclude and acknowledge that the dominate metaphoric framework for organizations in the 20th century has been Newtonian/mechanical (the machine-like predictability and replicability of actions and chain-of-command), with the benefits of Cartesian separability and isolated consideration of organizational units and functions. Frederick Taylor's "scientific management" of the early 20th century (Taylor, 1911) based much of its claim to legitimacy in the scientific methodology of logical positivism and in physics isolated from subjective contexts.

If we accept that 1) metaphor is central to our conceptions of organizations, and that 2) Newtonian/mechanical metaphors are precedent and dominant to this day in our conceptions of organi-

zations, then Newtonian/mechanical metaphors are our default conceptions of organizations. That is to say, in the absence of the articulation or consideration of another metaphoric framework, we and those with whom we work are almost certain to consider organizations heavily or exclusively within machine-similar frameworks, with the attendant strengths and weaknesses of those metaphors.

The implications of chaos theory for organization description and perhaps prescription have enjoyed broad interest in the business organizational community since the 1992 book by Margaret Wheatley, *Leadership and the New Science*. Wheatley took many of the concepts of "new science," particularly chaos theory as it had been described and considered in more limited social contexts by authors such as James Gleick (*Chaos: Making a New Science*, 1987) and considered them within specific organizational context and functions.

Wheatley describes at length the Newtonian/mechanical characteristics and metaphor that dominant our organizational thinking. Organizations, and the organization of knowledge itself, have been marked by the "reduction into parts and the proliferation of separations." We have focused our organizational energies on

> structure and organizational design, on gathering extensive numerical data....We believed that we could study the parts...to arrive at knowledge of the whole. We have reduced and described and separated things into cause and effect, and drawn the world in lines and boxes (pp. 27-28).

Wheatley addresses the issue and practice of planning specifically:

> We've been planning and predicting, analyzing the world. We've held onto an intense belief in cause and effect. We've raised planning to the highest of priestcrafts, and imbued numbers with absolute power (p. 26).

Gareth Morgan's work has focused largely on the value and variety of metaphor within organizations. It's notable that the 1997 2nd edition of his landmark *Images of Organization* gives more attention than the original both to the centrality of metaphor and to the emerging conceptual and analytical framework of chaos and complexity theories. Morgan, while advancing the importance of metaphor, stresses their internal and general limitations. Morgan's "machine" metaphor, which he holds to be the dominant one of our culture, has particular strengths when the approach is applied within organizational activity. Organizations-as-machines works well when the task is straightforward, when the environment is stable, when the product is uniform, when precision is at a premium, and when the "human 'machine' parts are compliant and behave as they have been designed to do" (1997, p. 27).

But the "severe limitations" of this Newtonian/mechanical construct can include the creation of organizations unadaptable to changing circumstances, the growth of "mindless and unquestioning bureaucracy," the undesirable consequences of the interests of individuals being at conflict with goals the organization is designed to achieve, and the "dehumanizing effects upon employees," particularly those low on the organizational chart (p. 28).

Morgan's 1997 treatment of chaos and complexity theories is not as fully developed as his other metaphoric considerations. But he does see substantial promise for the development and advancement of the metaphor, particularly in enhancing our abilities to rethink what me mean by organization and what roles hierarchy and control have in those reconceptions, manage changing contexts as an "art," learn the use of small changes to create large effects, and live "with continuous transformation and emergent order as a natural state of affairs" (p. 266).

Oxford physicist and philosopher of science Danah Zohar, in her 1997 *ReWiring the Corporate Brain: Using the New Science to Rethink How We Structure and Lead Organizations*, sees an organizational world of "Newtonian organizations...that thrive on certainty and predictability....Power emanates from the top....[Such organizations] are managed as though the part organizes the whole." The emphasis on control and command "isolates these organizations from their environments. They don't

interact with or respect those environments, including the people who work with them" (p. 5).

Michael G. Dolence and Donald M. Norris are the authors of 1995's *Transforming Higher Education: A Vision for Learning in the 21st Century*. It is an influential work among academic planners and a featured publication within the Society for College and University Planning. Dolence and Norris describe both the processes and organizations of higher education as being of "classic, late Industrial Age design," a "factory model" characterized by "insufficient flexibility," a fixation on processes rather than outcomes, and "high costs" (p. 11). The authors advocate institutional planning and transformation based on a loop feeding back to itself (reminiscent of Senge, 1990) of realignment, redesign, redefinition, and reengineering.

Chaos Theory

Chaos, in the physical sciences, is not the random activity that the term's common use suggests. Chaos theory, instead, holds that many seemingly random activities and systems in fact evidence complex, replicated patterns. The behavior of these systems is nonlinear, that is, behavior feeds back upon itself and modifies the patterns. Further, predictability of the system's behavior is restricted to a relatively short time frame.

Chaos theory's roots in science go back more than a century to Henri Poincaré's proof that the gravitational and orbital behavior of bodies in the solar system could not be explained only with simple, Newtonian, linear physics (Hayles, 1990; Ruelle, 1991). But ongoing attention to chaos theory is broadly considered to have begun with the work in more recent decades of MIT meteorologist Edward Lorenz.

Lorenz had been working on computer models of the weather in order to enhance predictability. In one noted episode from the early '60s, he had entered a number of weather conditions into a simple computer and graphed the resulting weather patterns. He sought to replicate the patterns, but this time rounded the mathematical measurements of weather conditions to three decimal places instead of six. He expected only slight deviations in his findings, and for the two graph patterns to reflect similarities. Instead, after only a few iterations of the computations, the patterns began to vary greatly from initial findings, to the point of no correlation at all. Yet within this seeming randomness, boundaries existed on the behavior of the system, and certain weather patterns recurred. These are conditions which characterize actual weather (Gleick, 1987).

Chaotic functions demonstrate *extreme sensitivity to initial conditions*. and *extreme sensitivity to influx*. Following from Lorenz's work, this notion is popularly called *the butterfly effect*, where the flapping of a butterfly's wing in Asia may eventually alter the course of a tornado in Texas (Lorenz, 1993).

The explanation of the importance of small factors comes through the circumstance that chaotic systems are dependent upon *feedback*. As opposed to Newtonian concepts which more clearly differentiate between cause and effect and their predictability, feedback is the notion that an effect becomes part of the cause in subsequent *iterations* of the pattern. Depending on the presence, nature, and timing of turbulence and the resulting iterative patterns, small factors can--but not necessarily will--become multiplied over time. Senge (1990) explored this concept as related to organizations in *The Fifth Discipline*.

What, then, allows chaotic systems to develop any sense of pattern, to stay within outer boundaries? It is the existence of *attractors*. Attractors are those elements in a system which have drawing or organizational power. The presence of multiple attractors, while establishing boundaries on a system, results in unstable, complex patterns, with the attractors acting upon one another, and demonstrating greater sensitivity to influx. It is the presence of attractors that also gives chaotic systems the quality of *self organization*, the ability to recreate order and pattern, at least temporarily, despite continuous compensation for internal and external shocks to the system, or turbulence (Parker & Stacey, 1994).

Chaotic systems demonstrate *self-similarity* at their various levels. In natural systems, self-similar structuring, called *fractals*, is evidenced in cloud formation, plant structure, landscapes, circulatory systems, wherever chaotic organization itself is evidenced. Schwartz and Ogilvy (1979) described this structural principle as holographic, in which the whole is contained in the part.

To summarize, a chaotic system is one in which apparently random activity is in fact complexly patterned. Patterns, created by attractors, are disrupted and modified by the presence or influx of smaller or greater levels of turbulence. Attractors work to keep the system within boundaries. Chaotic systems demonstrate self-similarity, or fractal structuring, at various levels of the system. The infinitely varied interactions of attractors and turbulence make pattern predictability difficult in the near term and impossible over the long term. Despite limited predictability, patterns do emerge and are substantially the creation of system conditions and inputs.

Investigators in fields as varied as astronomy, meteorology, geology, ecology, and quantum mechanics, to name but a few, have verified chaotic patterns and constructed mathematical formulae to describe them (Newman & Wessinger, 1993). Chaos theory in social systems, many of which evidence anecdotal characteristics of chaos, has been more difficult to document, largely because of a lack of quantification methodology. The application of chaos theory principles to such systems remains controversial. But in disciplines such as economics and electoral political science, both of which yield enormous quantities of numbers, chaotic patterns have been confirmed and described in formulae (Gleick, 1987; Priesmeyer, 1992; Brown, 1995; Kiel and Elliott, 1996). If we accept that chaos, though it may be difficult to mathematically document and measure in social systems, has been indicated and critically reviewed in enough social system circumstances to justify the analysis of other systems through its lens, then it is appropriate to consider specific tenets of chaos theory which may have bearing on the dynamics of human organizations and activities.

This study will is not the first effort to consider strategic planning in higher education against a background of chaos theory. When the Virginia Commission on The University of The 21st Century issued its report, "The Case for Change," a report produced in charge from the governor and the state legislature, the report's "organizing metaphor was deterministic chaos," according to one of commissioners and one of the two primary authors of the report, Gordon K. Davies (1997, p. 7). The metaphor of chaos theory is implicit throughout the text, but explicit in the chaos-theory-formulae, computer-generated, somewhat abstract illustrations throughout the report. A notation in the report (Commission, 1989, inside back cover) says of use of this metaphor:

> A mathematical concept called, somewhat misleadingly, "chaos," holds that at certain points small changes within systems will produce great and unpredictable results....The mathematics created to conceive..."chaotic" situations is non-linear: the future does not follow trends established in the past....What [chaos theory] represents to us is the probability that the future will not be simply a linear extrapolation of the past, that small events happening today will cause new patterns to emerge downstream.

Case Studies

Four cases are included in this study. These institutions are Blue Ridge Community College in Weyers Cave, Virginia; Carson-Newman College in Jefferson City, Tennessee; the University of Calgary, Calgary, Alberta, Canada; and Red Deer College, Red Deer, Alberta, Canada. The institutions are selected for inclusion in the study, first, for their compliance, as observed by the researcher (particularly through the documentary record of planning processes) and affirmed by key institutional leaders such as presidents or chief planning officers, as having planning processes that are compliant with Keller's (1983) definition of genuine strategic planning; and second, for elements of interinstitutional diversity, including geographic location, degree-granting status, mission, enrollment base, public or private status, national and state/provincial environments, and time of involvement in the current

planning program.

Blue Ridge Community College is a public, two-year college, offering vocation and transfer programs through the associate degree, and located in rural Weyers Cave, Virginia. It is a small institution, with an enrollment of 2500 full- and part-time students. The current planning effort is about eight years old, and corresponds in large with the current president's tenure. The planning process is highly committed to the involvement of a large portion of the institution's internal and external constituencies. Blue Ridge Community College is of particular interest in this research, as it is an institution which has conducted its planning with explicit knowledge of and reference to chaos theory among key planners (Levin, Lannigan, and Perkins, 1995).

Carson-Newman College is a small, private college in a small town, Jefferson City, Tennessee. The college is affiliated with the Tennessee Baptist Convention. The college is more than a decade into its current era of institutional planning, this mark suggested by the strategic report and plan produced by contract in 1987 with Barton-Gillet Company of Baltimore, and under the project direction of George Keller. A second, major strategic plan was completed in 1994, and related efforts continue, as in the consultive decision process in which the institution in 1996 decided to retain the "college" designation rather than to rename itself a "university." A goal has remained constant: to be recognized as the finest Baptist college in the country by the year 2001. The same individual has held the presidency throughout these planning efforts. Keller's involvement with the process was an assurance of recognition his criteria of genuine strategic planning. Initial conversations indicated widespread satisfaction with the planning process and its result. The case study appeared to be an opportunity to examine the propositions against a successful and largely concluded case.

The University of Calgary is a public, doctoral and research university which marked its 30-year anniversary in 1996. Enrollment is about 20,000. Recent years have been challenging: the provincial grant declined 20% in three years in the late '90s, salaries have been cut, academic and nonacademic staffing has been reduced, and tuition rates are climbing to near U.S.-state levels. Enrollment trends, once robust, have flattened. The former president initiated a major strategic planning initiative in early 1996, in the last half-year of his term. The new president inherited the process. The institution claimed to have launched the most ambitious and large-scale strategic planning process in Canada, and information they had gathered on other universities across the country appeared to offer some confirmation of this claim. Further, George Keller (1997) named the University of Calgary among a handful of institutions he considered to be currently or recent engaged in real strategic planning, and his citation of the University of Calgary was the only Canadian institution in his short list.

Red Deer College, a 5000-student, two-year institution 100 miles north of Calgary, labors under fiscal and enrollment challenges similar to the University of Calgary. The college has been denied in their effort to receive four-year-degree status, and the political prospects for success on this goal are not promising. The president, two years in office, in the fall of 1996 revisited with the Board of Governors the institution's fundamental purposes and directions. The results included a commitment to a new planning process that began to unfold in 1997. The college was selected for case analysis on the basis of conversations with the president and initial documents produced by the college's board, documents which affirmed their desire for a transformational strategic planning process. The case presented particular opportunities to observe the effects of presidential initiative and leadership in the initiation of a planning process. This was anticipated to be a positive development. Most tragically, but providing new insights to the study, the president became very ill during the early stages of the planning process and subsequently died. His handicapped leadership during his illness, and his eventual death, had substantial impact on the planning process, and provided insight from a different perspective on the role and importance of presidential leadership in planning.

Propositions of a Chaos-Theory Metaphor for Planning, Their Derivations, and Their Examination in Case Studies

These propositions are derived from a consideration of the literatures of strategic planning, chaos theory in natural science, and applications of chaos theory argued in other social contexts. For the purposes of this paper, only some highlights of this literature are noted. The roots of the propositions are described more fully in the dissertation study from which this paper is largely drawn (Cutright, 1999). The description of each proposition is followed immediately by a discussion of case-study planning experiences related to the proposition.

Proposition 1: The ideal outcome of planning is planning, not a plan. Dwight Eisenhower was more direct: "Plans are nothing. Planning is everything" (Keller, 1983, p. 99). Keller (1983) noted that strategic planning is not the production of a blueprint, or a fat, detailed document. Rather, is it a strategic direction and central strategy, which adjusts to changing conditions.

Cohen & March (1974) alluded to the prime role of planning *vis a vis* plans in higher education. As they noted, many students of planning, to that point, had asserted that the interaction brought about by planning was more important than the plan itself. "Occasionally that interaction yields results of positive value," Cohen & March wrote. "But only rarely does it yield anything that would accurately describe the activities of a school or department beyond one or two years into the future" (p. 115), given the importance of environmental turbulence such as changes in personnel, political climates, foundation policy, and student demand.

This is not to suggest that plans should not produce goals and targets for an organization. Mintzberg (1994) was critical of post hoc rationalizations of failed planning efforts in the planning-itself-is-the-goal vein. Yet it is important to note that the failures of which he speaks are products of overly detailed efforts, constructed by management fiat and heavily dependent upon narrowly considered and shaky data. As to simplicity, Mintzberg wrote: "The more elaborate the planning procedures become--in response to the failure of the simpler ones--the greater seemed to be their failures" (p. 295). Mintzberg ultimately argued for planning that emphasizes process ahead of product.

Large, detailed plans, issued on a long time horizon of five, ten, or more years, are common in higher education. Further, they are sequentially structured, with each step dependent upon the completion, within a specified time frame, or precedent steps. This is, suggests one author, somewhat like playing a game of pool by specifying, before the commencement of play, each and every shot through the sinking of the eight ball (Priesmeyer, 1992).

Academic planners James Morrison (editor of the Jossey-Bass planning journal *On the Horizon*), George Wilkinson, and Linda Forbes note in their forthcoming book *Common Sense Management* that many others have said that "it is the process, and not the plan that counts." They appear to endorse this general viewpoint with their instruction: "Keep this in mind: *The product you are seeking at each step is not a written report. It is a strategic mind-set of the senior leadership, indeed the whole organization*" (emphasis original).

Rebecca Stafford, president of Monmouth University and an established author and consultant in strategic planning, has noted where she believes many strategic planning processes go wrong (1997). Among her key cautions: most plans are far too detailed, or worse, burdened with fairly meaningless language disguised as details. She advises that the strategic initiatives in a plan should be few and specific.

The Case Studies and Proposition 1: The strategic plans and related documents particularly of Blue Ridge Community College are very short, by comparison to other institutions within and outside of this study. A Blue Ridge faculty member has a useful analogy: "When you look at the American Constitution, you see a very short, very flexible document, because its flexible and basic." An administrator at BRCC raised an alternate analogy to government: "Most of the plans and presidential thinking I've seen elsewhere is tied to old theories, it's hierarchical, heavily structured, everything is going to happen boom, boom, boom. These are like Communist five-year plans, like you can predict crop production

in five years. In practice, everybody forgets about it three months after its written, except that lonely person who takes it seriously, does everything according to that plan—and then finds out they were doing the wrong thing all along, because things change." Their is irony and paradox in the need to envision a future and the need to be flexible in its address. President Perkins referred to a plan implementation document: "The time frame is 18 months, which is a helpful length of time. But I'm sure we'll need to revisit it in six months."

President Cordell Maddox at Carson-Newman College had only one general criticism of the strategic plan developed by George Keller's firm: "I felt like it ought to be more specific. Keller reminded me that it needed to be general. It's a strategic plan, and the college is going to have to decide how to do these things." CNC's Strategic Plan II may have evidenced the absence of Keller's counsel on this issue. It is substantially longer than Plan I, although clearly in its spirit. But planners and those charged with Plan II's implementation found that it didn't have the same powers of animation of Plan I. It was substantially shortened to a two-page summary. "It just had to be more digestible for people," someone said. "The thing to remember with a plan," said a faculty member at CNC., "is that it's not a destination. It's a journey."

Plans, or their mere creation or existence, have no powers of animation. As a faculty member at Red Deer noted, "we'd produce a plan a year, it seemed," but it was an institution operating without daily, ingrained reference to a plan. The University of Calgary had a history of producing long, perfectly-bound, "beautiful" plans, but they were episodically launched and not well connected one to the other, let alone to daily life within the institution. They were long on details, but short on their reach. A faculty member: "You look at what the best people have been doing here, and they're so far out in front of those plans...."

Proposition 2: Planning begins with a distillation of the institution's key values and purposes. These elements are not dictated from above, but discovered from within. In the paradoxical context of chaos theory, they provide a constant source of reference but are always open to challenge and modification. This process, within the context of chaos theory, is the discovery of a system's attractors, those principles which organize the system despite turbulence, establish its boundaries, and give it a general direction for the future. The attractors allow the actors within the system to make decisions consistent with the organization's collective identity, purposes, and goals, and to make decisions about the deployment of finite resources.

If colleges and universities are considered as chaotic systems, then the attempt to import principles, or their imposition by executive fiat, are alien to reality. Attractors already exist in the system, chaos theory states, and attention must be paid to them. Imposing new goals and purposes, without discovering and reconciling those already operational for the system actors, will result in an early separation of plans from reality. Failure to recognize the existence of attractors operant at various locations within an organization also ignores the centrality of fractal structure. A college may profess dedication to the quality of teaching as a central principle, but unless this principle is a goal and motivator at all levels of the organization, it is unlikely that this central dedication will be reflected in the experience of students.

This discovery of attractors would rarely be accomplished by reference to a college's mission statement. As many have noted and many more have experienced, these documents are often "kitchen sinks" of collected ideas and goals, good and bad, littered with platitudes, and with little sense of priorities. These elements may be attractors, but they have limited organizational power because of their multitude and lack of priority. Mintzberg (1994, p. 297) similarly decried the presence of "empty platitudes" at the heart of most planning processes. Newson and Hayes (1993), in an analysis of nearly 100 different college and university mission statements found those mission statements to be largely indistinguishable, of little focusing power, and exercises in institutional compromise. They include nearly all objectives suggested within the particular institution and reject very little in potential identity and mission. "Not surprisingly, few colleges find much use for their mission statements. They are usually not guidelines for serious planning" (p. 277). David Dill, commenting particularly on the Newson and Hayes study, asserted that there is intention in this situation: such mission statements are externally

oriented, rather than internally, and are meant to keep an institution's options wide open. Dill has also observed the power of mission statements more simply and narrowly stated. When a mission statement is more focused, and "grounded in the culture and traditions" of the particular institution, then that mission statement is "central to the implementation of a successful planning and resource allocation process" (1997, p. 188).

Neumann and Larson considered the circumstance of a president, particularly a new one, who develops an institutional "vision" without consideration of operative imperatives within the college or university. Not only is this lack of recognition a neglect of opportunities and momentum already in operation, but institutional culture presents many opportunities to thwart an alien vision through resistance and sabotage (1997).

Chaffee and Jacobson were even more pointed. Their scan of planning history yields the lesson that "the planning process that is inconsistent with organizational culture is doomed to fail" (1997, p. 231). Chaffee and Jacobson noted that operative cultures are based on underlying and deep values and assumptions. When vision and the institution's resident values go head to head, the result is almost always the same: "Culture 1, Planning 0" (p. 230). Morrison et al. (1999) stress the importance of seeking the broad involvement of institutional stakeholders and reaching agreement, as much as is possible, about mission and vision as preliminary to focus on the issues key to institutional success and the development of a strategy for their accomplishment.

The Case Studies and Proposition 2: Ironically, it was at Blue Ridge College that it was several times offered that very short, official planning documents were "a little long, but we're working on it." But what was also clear was that the shortening efforts were aimed at even greater distillation toward the institution's key purposes and directions. "It allows everyone to work off the same page," said one staff member, who, like others at the college, could recite key documents from repetitive use. An administrator offered that the short documents, produced through long, tortuous meetings and processes, and from which all operational documents subsequently flowed, were his "bible."

At Carson-Newman College, a faculty member reflected on the relative simplicity and on-target-ness of Keller's report. "The potential was always there. I saw the plan as encouraging us to bring that potential to actualization, to more fully reach our potential." The only element of the first plan that met some resistance or revision over time was Keller's assertion that CNC could be the "finest small Baptist College in the country." As the plan operationalized, people asked, "What does that mean?" For some, it meant nothing. For others, it would be the result of meeting more specific aspirations, and not an operational goal in itself.

The issue of fundamental values and their assertion became a flashpoint at the University of Calgary, introduced perhaps, but certainly exacerbated, by the use of a consultant external not only to the university, but to academe. President Terry White is said to have expressed reservation about the consultant, perhaps driven by faculty reviews that "that this process recognizes the importance of breadth, but not depth." An early consideration in the planning was the merging of faculty units: "People from the corporate world think of that as change. It's really not fundamental at all," said a faculty member dismissing the consultant contribution and implied values. "We're not Wal-Mart" was another comment. A key person in the planning saw the failure to "acculturate" the consultants to the values of the university as "a horrible mistake." "There was some cynicism about the consultants," said another key planner, "but I think we've turned that around." Even if that is so, time was lost and energy dispersed in the recovery effort.

To be useful, the values determined and asserted must be well thought and institutionally specific. The Red Deer statements read well, but are broadly assessed by administrators and faculty as "useless," "motherhood," "wannabe," and "everything and nothing" platitudes.

Proposition 3: The widest possible universe of information should be made available to all members of the institution. This universe of information includes ongoing, rich, and current feedback. Keller's (1983) advancement of the concept of environmental scanning and information gathering as critical to good planning has become widely accepted. Where chaos theory perhaps advances the concept of information gathering and sharing is its empha-

sis on the importance of feedback. The discussion and creation of plans themselves are elements of the informational landscape. They create feedback loops, whether planners recognize them or not. Schuster et al. (1994) exaggerate the importance that Keller (1983) places on the need for secrecy and confidentiality in the deliberations of the Joint Big Decision Committee, Keller's generic name for a campus's central planning body. But chaos theory does support Schuster's argument for open planning, and Keller subsequently to his 1983 book would revise his view on the Joint Big Decision Committee; more open communication engenders trust, he concluded (1988). Chaos theory suggests that planning executed in secret or with an air of exclusion will deny itself the creativity, vitality, and connection with reality that open--that is to say, feedback-rich--planning processes enjoy.

Chaffee and Jacobson (1997) held that information should not only be widely shared, but shared in a variety of ways, including reports, speeches, newsletters, and other ways. This sharing should include sensitive information. Likewise, they write, the planning process should be open to information offered from any source; the openness of the administration with information sets the tone for receptiveness and allows the process to capture information that otherwise would escape. This is consistent with Peterson's contextual planning model (1997), which emphasizes widespread participation in the information-gathering and planning processes.

The Case Studies and Proposition 3: The case of Blue Ridge Community College offers, among the four cases, the example of an institution committed to both the open flow of information (a "liberation of information"), and the consideration of feedback as part of that information base. A simple document which went through 37 drafts over several months is one of the clearer examples of that commitment, typifying BRCC's belief that only this kind of feedback, and access to information that made the feedback meaningful, leads to planning processes and products that are worth any investment at all. "There's a ton of information on the table," as one person put it. Beyond making for more informed input into the planning process, the sharing of information would seem to contribute to the effort to reach near-consensus on planning steps. "You constantly share the information so no one can come back and say they didn't have the info." "You hear people's voice," said another faculty member. A common notation among interviewees were ideas of quality and substantial direction for the planning process which were put forward by lower-level staff members who would be absent from the planning process in many institutions. "You just never know what's going to come out of the brainstorming."

At Carson-Newman College, this proposition was demonstrated first through the substantial outreach that the consultants made to involve any member of the college community who wanted to be interviewed. The broad receptivity into which the plan was delivered by the consultants would appear to affirm its reflection of broadly held aspirations. The college continues to monitor its state relative to the plan by the appointment of a planning officer, whose duty it is to collect information, both qualitative and quantitative, from administrative and academic departments, to make semiannual report on the state of the plan, and to widely distribute those reports. The outcome of the discussion of changing from a college to a university surprised those charged with gathering information and making report to the president and board. They sought, and received, input different than their own initial impressions, and "changed their minds."

The University of Calgary's planning process was marked by hundreds of public meetings, purposefully constructed focus groups, dissemination of information and planning progress through the campus internet and publications, regular formal reports, and a leadership commitment to open information. There remained doubt, however, among dissidents that the effort was as genuine as it should have been. There was a sense of "false democracy" and and a "rush" among these individuals. "In a package we received, there was a quote to the effect that we could no longer afford collegiality...that you can't be weighted down by the deliberate process of consultation that you might associate with collegiality....My thinking is you can't adapt to change unless people buy in, and they're not going to buy in if they think they're being sidelined." Whether the impression could be justified by "objective" analysis or not, it was a widely held impression, and one that contributed to a lack of embrace of the planning process and its products.

At Red Deer College, the disfunctionality of communications seemed palpable. Administrators

were accused regularly of ignoring input and the established criteria of institutional decision making; they were even called "liars" and "crooks." Faculty members were considered by more than one administrator as people who "have no respect, no interest in this institution....I'm sick of consultation." The locus of planning, the board of governors, seemed to create another opportunity for or impression of information suppression, via "sugarcoating" of information by the administration. "[The governors] are not really involved in the lifeblood of the college....There's [the issue of] background knowledge and the culture of the college." And, "The place is falling apart, and at the board, everything is smooth. Something happens in the transfer of information as it's filtered back to the board."

Proposition 4: Dissent and conflict are creative, healthy, and real. The absence of conflict is reductionist, illusory, and suspect. Chaos recognizes and respects the power of turbulence. It is the essence of creativity in chaotic systems. Ideas uncontested are suspect in their power and frequently unable to withstand the inevitable influx of turbulence. Yet how much of our planning is characterized by a desire to minimize conflict, to subtly suppress dissent, and to reach early consensus? Keller (1983) noted this desire for tranquility as a root of the smothering of organizational creativity when he quoted the president of Indiana University: "Many presidents spend much of their time trying to anger the fewest people rather than trying to produce something really good..." (p. 173). Keller further noted that many presidents see planners as creators of problems, not solvers of them.

Mary Parker Follett, an organizational theorist and consultant writing seven decades ago, distinguished our various ways of dealing with conflict as domination, compromise, and integration (1925, in Fox and Urick, 1973). Chaos theory would suggest that domination, the simple victory of one side over another, merely delays the turbulent effect of the losing side's resistance to or outright sabotage of compliance with the "winning" position. Compromise, more ostensibly cordial, likewise delays or ignores turbulence, in that agreement is typically reached at a fairly low and superficial level, and leaves the turbulence as an unrecognized, background element. Integration, solutions in which the desires of all sides have been met and skillfully combined, is the creative resolution of conflict, and the resolution most consistent with chaos theory. Neither did Follett suggest nor would any other observer hold that all conflict is resolvable by integration. But without recognition, even encouragement, of conflict, without all sides putting their cards on the table, integration is impossible.

Consonant with Follett, Zohar (1997) holds that "debate"—the contesting of preset positions to victory or defeat—has become the dominant Western form of solving disagreements and arriving at decisions. But before debate, in ancient Greece, was *dialogue*. *Dia* means "through," and *logos* is translated as "words." But an older translation of *logos* would be "relationship." Ancient Greeks, before the assignment of debates to representatives in republican government, would meet in the agora, or marketplace, and hold dialogue on issues. "This allowed for the emergence of collective insight, collective wisdom, and a nonconfrontational way of solving problems....Dialogue is about finding out, about discussing something openly until I break through to some new knowledge or insight....Dialogue involves my emotions and my deeper sensitivities, as well as my best intellectual thinking facilities" (pp. 137-138).

Neumann and Larson (1997) found relevance in these general perspectives for contemporary strategic planning. Academic culture itself is built largely upon "communities of divergent discourse" (p. 194). What is to be avoided is the emergence in planning of an administrative, "single-minded view that stifles the disciplined growth of certain lines of thought in favor of others" (p. 194). Openness to various points of view can, Neumann and Larson cited as an example, can lead to the blending and mutual consideration of viewpoints that might be pigeonholed early on as self-interested or irrelevant. Tierney (1992) echoes this perspective. Rather than suppress difference, he writes, we should honor it, and "build across our differences a commonality that encompasses them" (p. 18). Holton (1995) suggested that conflict is not the problem, but the solution; conflict "can be cathartic, providing opportunities for revitalization, energizing, and creativity by all involved in the academy" (p. 94).

The Case Studies and Proposition 4: Planning meetings at Blue Ridge Community College have been places of "shouting and screaming and blood all over the floor." Authority was not deferred to in such circumstances: "If your idea won't stand up, get a new one." "If [a particular professor] doesn't have

a fight, he'll pick one." Yet it is a process in which people have been able to keep conflict within creative bounds and to reach a high degree of consensus about institutional direction. It's a tone set in part by the administration: "[President] Jim Perkins has the thickest skin I've ever seen."

Red Deer College, by contrast, is an institution where conflict was became more open as belts tightened, but was not well channeled toward resolution of differences, as symbolized by court action against the board and administration by the faculty association, an action supported by the overwhelming vote of the faculty. It is an atmosphere which appears to have been created in part by the deferral of conflict. One faculty member referred to it as an ongoing "false tranquility. Another said: "Rather than debating our differences openly, we tend to go and talk to somebody else about it. If I have a disagreement with someone, I'll go talk to their supervisor or colleagues and say, 'Look what this guy is doing' rather than go to that person." When programs were saved from elimination by community petition, administrators described the community's involvement as a "win-win" situation; faculty members regarded it as a win *over* administration, and winner take all. Red Deer's culture had polarized to the extent of making creative dissent and dialogue very difficult within the institution. As an interviewee at another institution said with regard to institutional conflict, "You need reasonable protection so people won't hurt each other. You need boundaries."

Faculty dissidents in the planning process at Calgary resented their categorization as people irrationally or selfishly blocking change because of their objections or continued questioning. A quote from a planning task force member in the local daily paper agitated a faculty member: "We are, quote, 'paranoid.' This is condemning unjustly and arbitrarily professors for raising criticism. This is part of our job. And yet, you raise a criticism, you're not on the team, you're part of the problem, you cannot deal with change." A faculty member generally friendly to the planning process: "I've heard others express that if something went on the table outside of what the leaders want to discuss, it was dealt with in a way that said, 'Well, we'd like to talk about that, but we have only a couple of hours so we have to stick to our agenda.' So we have people thinking that this is orchestrated."

Proposition 5: Linearity doesn't work in strategic planning. It doesn't work in dictation--planning and plans imposed from above--or in collation--planning and plans created solely by the collection of unit information. By this point in the argument, the reader may see the obvious incompatibility of top-down, executive-committee-dictated planning with chaos theory. Attractors are not identified, feedback is denied, faint recognition of the environment is inevitable, and the implementation of plans is made virtually impossible by the lack of fractal structure. But it may be less obvious that the planning structure opposite to dictation--collation--is equally unsuitable.

Collation is the collection of individual "plans" by the department, the collection of these departmental collations by the college or school, and so on up the structure, until they are united at the top level of the organization. As Keller wrote (1983), strategic planning "is not a collection of departmental plans, compiled and edited....A university is more than the aggregate of its parts" (p. 141). It is possible to mistake this sort of collation for a sort of empowerment, or a democratic process, but collation can at best only identify individual desires and directions.

Chaos theory would inform us that this process lacks the connectivity between elements of an organization that is inherent in systems. Collation without feedback creates only linear and upwardly directed information paths. Collation without feedback and the identification of organization attractors does not contribute to self-organization and sustained direction.

The type of bottom-up strategic planning element suggested by chaos theory is more akin to the "grassroots" model of strategy formation championed by Mintzberg (1994): "Strategies grow like weeds in a garden, they are not cultivated like tomatoes in a hothouse" (p. 287). Such strategies spring up unbidden throughout the organization, but they do not become organizational until they "become collective, that is when the patterns proliferate to pervade the behavior of the organization at large" (p. 288). Management's role, according to Mintzberg, is to recognize these emergent patterns and to nurture their growth throughout the organization. Chaos theory would suggest that such a role is an acknowledgment of the centrality and power of fractal structure.

Neumann and Larson (1997), in their consideration of processes which flaw planning processes, noted that even when planners use feedback mechanisms, they may fail to seek out negative feedback (such as disagreement or initiative failure). Such planners give attention instead to feedback that supports leaders' preconceptions. It is a "good news" approach to planning that robs the process of vitality and relevance. It is a partial, truncated, and flawed approach.

The Case Studies and Proposition 5: Red Deer was no stranger to planning, but it was top-down planning, board-directed and -drafted. For several years, one faculty member observed, "We did a strategic plan nearly every year. Then they go on the shelf and we forget them."

The University of Calgary had several previous, major planning processes. But they were marked by the collation of information from academic units and their collection as a master document without development of a central sense or specific mission. "It was a very decentralized process of planning, but there wasn't anything that pulled it all together at the institutional level." That experience of bottom-up "planning" informed the planning process at Calgary in 1997. But just as informative was their developing sense of the failure of top-down planning. A person who worked full-time on the UC planning effort:

> We did benchmarking with other institutions. We had access over the web to the plans of several other institutions and some of them looked terrific. But when we examined them further, when we would make phone calls to ask them how their plan was going what progress they've made, time and time again we found that the plan barely got past stage one. It was a top-down plan, because it clearly was the vision of one the leaders. So there wasn't buy-in by academics, and academics are very good at sort of lying low and allowing things to pass. We're very skilled at saying, "That's very interesting, very interesting. Let me think about that. Let me take that to my colleagues." So all those plans died.

Proposition 6: The institution should budget--fiscally and psychically--for failure. Pilots are alternate futures. Not all can be realized or succeed. Several of these propositions are stated with attention-getting provocation, and none so more than this one. Experimentation and striking out in new directions are often viewed heroically on the front end, but disparaged on the back side after less than favorable results. We should recognize that in planning, as in financial investment, higher returns are made possible by higher risk. The challenge is to improve—not assure—the chances of success.

Universities are historically averse to change, even those changes which are ultimately and broadly adopted in higher education (Seigfried et al., 1995). This might be characterized as an overly developed aversion to Type I statistical error, that is, an aversion to making a change even when strong evidence exists that change is beneficial.

Yet strategic planning by its nature attempts to make some tentative decisions about and preparations for an uncertain future. As Keller wrote (1983), "...strategic planning increases risk taking. It fosters an entrepreneurial spirit, a readiness to start new ventures" (p. 142). Dolence and Norris caution that if we wait until "the vision is perfectly clear and risks have vanished, the opportunities will have passed, as well" (1995, p. 4); the costs of lost opportunity are collected more quickly in a more rapidly changing environment. Morrison et. al (1999) encourage that "you and your [planning] colleagues must be imaginative, innovative, and willing to take risks," and "that means you are flexible, and not wedded to a set of strategies or action plans that you cannot change."

Chaos theory suggests that the predictive time line is shorter than likely is the start-up and testing times of complex projects. Chaos theory suggests that strategic planning can at best identify likely or possible futures, but cannot, through the compilation of adequate data, foretell the future through longitudinal projections. Therefore tests and pilots should be launched, with the knowledge that not all possible or likely futures will come to pass. Even though strong data collection and ongoing feedback can result in what might be called "wise piloting," some pilots will fail.

Keller (1983) recognized this in an element of his prescription that is perhaps less closely ob-

served than other elements: "To foster change, have a venture capital fund ready to support those on campus who are the most creative and entrepreneurial" (p. 169). Later work by Keller (1997) supports this idea even more emphatically: "Unless money follows new ideas, the strategic priorities will not get adequate support and the planning exercise will be perceived as a sham" (p. 168).

It is more difficult to document, but it follows that institutions are as psychically averse to piloting as they are fiscally averse to it. If we subtly punish or isolate those whose pilots seemed reasonable and which were blessed, but fail, and we quickly distance ourselves from failure rather than examine it for lessons, we discourage the experimentation necessary to discover the future.

Weick, who confessed a "mild affection" (1976, p. 6-7) for loose coupling, saw as one of its benefits the ability to test "mutations and novel solutions" it develops in response to its "many independent sensing mechanisms." Weick cautioned that this same structure that permits these mutations to flourish may prevent their diffusion. This would support Mintzberg's (1994) suggestion that a role of management is to identify and promote promising strategies throughout an organization.

The Case Studies and Proposition 6: There was a clear sense at Red Deer College of a lack of connection between planning and budgets. "You'd get [a plan] drafted, you'd present it to the board, and bingo, on the shelf it went. When it came time to develop budgets, it's back to ad hoc decision making," said a faculty member who'd had experience sitting on the board as the faculty representative. "So people are cynical about it. They're not opposed to a plan because it brings change, but because it doesn't bring change. It's not being used as it's supposed to be used." There was also evidenced at Red Deer a sense of punishment of projects which failed. A joint college-business project didn't produce as anticipated and had to be abandoned. "The faculty was screaming for somebody's head to roll. Not everything is going to work," said an administrator. The necessity and benefits of experimentation, and failure, was the subject of one scientist's observation: "In the past, we only wrote in journals what succeeded, so I know that people were repeating failures one after another. My experience is that for every successful procedure, I probably tried ten times before I made it work. We have to do that same kind of stuff in the kind of endeavors we're looking at at the college." There is evidence at Red Deer, however, of moving toward more experimentation and funding of it outside of the annual budget process, even in tight times. A strategic initiatives fund to support new efforts was established during the interim presidency of 1997-98 and continues under the current administration.

Blue Ridge Community College established such a fund in the 1996-97 school year, a few years into the ongoing planning process. While only $20,000, the fund provides piloting of new ideas that "aren't part of the normal business or budget of the college, but they just come up," said an administrator. "We've made it clear that we're looking for ideas, for experiments, that in fact we have funds or we'll find the money. Another administrator noted that the fund was begun late enough in the year that not all of it was bid for or used, "but we don't have a use-it-or-lose-it policy. We can carry-over some funds to next year. And I'm very strongly committed to providing these funds next year....It's not a tremendously large pool of funds, but it's large enough to give pilot capabilities." An interdisciplinary trip for students to Central America was a funded initiative, but standard replacement of audiovisual equipment was turned down: "[The committee] felt it wasn't a visionary project. It was more, 'Here's what we're already doing.'"

"There should be a protocol," said a faculty member at the University of Calgary,

> that says you search for what went wrong [in programmatic experiments] as opposed to a protocol that says you search for who made the mistake to be held accountable....This place has to be the motherlode of free thinkers, people who are pushing the edge....If I don't get to see the small failures I'm going to be scared that we're trying too hard to get it right. We're going to put ourselves in the position of having only one victory at a time.

An administrator indicated a longstanding willingness for Calgary to fund, when possible, special initiatives outside of the regular budget process. "We're quite eager for people to come to us and say, 'Look, I've got an idea that would do this, this, this, but I need $10,000 to start it off.' We'd defi-

nitely like that. We'd do everything we could to find that money." The same administrator added:

> You've go to be prepared to put up with a certain amount of failure. Absolutely. You can't put up with everything being a failure, so you've got to look at the stuff in a judgmental kind of way. But you have to take some risks in this business. You have be prepared to take a fly around.

A faculty member involved in planning said:

> It's important that we have a reputation for encouraging creativity; for encouraging exploration; for encouraging taking risks. Because when we implement some of the changes we're proposing, we're going to depend on some risk takers to take the first step forward. It's very important that we nurture that kind of environment where people feel very comfortable and secure taking risks.

One of tangible outcomes from the planning process at Calgary has been the establishment of an explicit fund proposals for change and innovation consistent with the strategic initiatives. The fund is more than a million dollars.

Proposition 7: The considerable expense of time on the front end is an investment. It is recouped, with interest, in the future. There can be little doubt that top-down, stripped-down, feedback-free planning is faster. This is a false economy. Fast plans may be convenient, even poetic, but without a rich understanding of the environment, the discovery of attractors, and the creation of iterative structure, they will, more often than not, fail. Time and resources will be inefficiently spent as institutional leaders attempt to impose a plan alien to the system's actual dynamics. Alternately, a plan developed from these dynamics, and not against them, will be more fully implemented, more reflected at fractal dimensions of the organization, more in concert with the organization's attractors, and more successful.

Keller (1983) noted that genuine strategic planning is broadly participatory. But Newton (1992) suggested that conflict carrying out this involvement may arise from the clash between the corporate culture of administration, on the hand, and the academic culture on the other. The managerial bent of the former values quick decisions in response to rapidly changing environmental conditions, top-down decision making, and an expectation of organizational compliance. The latter culture values extended conversations, deliberation, and the testing of ideas over time and circumstances. Efforts to impose a corporate culture in domination of the academic culture, within the planning arena, often brings the planning process to a bad end.

Neumann and Larson (1997), who emphasize the importance of detecting organizational patterns and values that may be subtle but are nonetheless deep, note the many models of leadership and strategic planning emphasize broad involvement, but they note as well that in practice these principles are often ignored. Invitations to participate, or the creation of open forums, are not enough of an effort to gather broad input and diverse participation. Conversation, wrote Neumann and Larson, "must also permeate space and time." This expanded conversation involves not only formal meetings, but hallway talk, and entails an active effort on the part of planning coordinators to bring the thinking of groups and individuals to the attention of other groups and individuals. This is a process heavily dependent upon feedback, and feedback, in turn, is heavily dependent upon the investment of time.

Chaffee and Jacobson (1997) tie planning to institutional culture, and changing or redirecting culture, they note, can take substantial time. But they maintain that the "payoff can be immeasurably large." The payoff includes enhanced environmental sensing aided by many eyes and ears, the greater creativity made possible by many minds, and broad buy-in to the results of institutional planning, "in ways that the central administration could never have imagined or planned for" (p. 244). Conversely and "often, in the final analysis, [a] plan cannot be implemented, because key players have not agreed to it" (Innes, 1996, p. 470).

The Case Studies and Proposition 7: The planning process at Carson-Newman College began with a six-month consultancy and hundreds of interviews. The planning at the University of Calgary was massive, in terms of human, time, and financial investments. But perhaps the clearest contrast of the consideration of planning time as an expense or an investment is presented by the two-year college cases, Blue Ridge and Red Deer.

"It's pay me now or pay me later," was the way a faculty member at Blue Ridge put it. Another said, "Lots of time you think you don't have time [for planning]. But if you don't take the time to do these things, then it costs you later. I prefer to deal with it up front." That faculty member noted the example of an administrator who was repeatedly rebuffed, in making unilateral decisions, by an institutional culture that placed a premium on consultation and consensus.

> "He could have backed up a bit, gotten buy-in. He's improving. If you don't deal with it [consultation] early, you still will have to deal with it. When that happens enough times, you start learning. He said he knew that, but I told him knowing and doing are two different things.

The administrator referred to had come to embrace the consultive process. As he said,

> I stepped on some toes early in my career here. If there's groundwork in bringing people aboard on what you're trying to do, even share with them the tactics of how you're doing it, it's not an issue. There are individuals who like to participate in the decisions. But the majority of people, as long as you keep them part of the planning process and keep them appraised of how you're going about it...as long as you can connect what you're doing to the strategic initiatives, there's usually no problem.

There's no doubt that such a process is time-expensive. "We're busier than in a dictatorship," as one staff member put it.

At Red Deer, by contrast, there was a repeated expression of consultation and decision delayed until crisis was impending, until, as one administrator put it, "the shit hit the fan." The possible elimination of programs and the firestorm or protest that followed caused faculty members to claim that established procedures of review were ignored, that criteria were "made up," and that the decisions of the administration couldn't be supported by objective evidence. "They just did their hasty job....I haven't heard a single person who has anything good to say about what was done over the last three months....The whole process was jerry-rigged."

When financial cutbacks hit Blue Ridge Community College, the time and effort they had put into planning allowed them to make responses that other colleges wouldn't or couldn't, e.g. the optional elimination of early-retirement personnel and the reinvestment of their salaries in other ways. Red Deer, by contrast, was in its final half-year of a three-year appropriation reduction before it moved to consider reduction or elimination of programs. By then, the process was so speeded as to virtually preclude realistic prospects of faculty participation and consultation. One might say there wasn't time to do it right. But it appeared, after the community outpouring of support for the threatened programs, that there was time to do it over.

Proposition 8: The executive is not demoted or minimized. The executive is the most critical shaper and champion of the process. Ultimately, the executive is empowered by the process. All of this may suggest, without intention, that the executive becomes figurehead in a planning process informed by chaos theory. Descriptions of chaos-related metaphors and management viewpoints have perhaps reinforced this perception. Gareth Morgan writes, "In complex systems, no one is ever in a position to control or design system operations in a comprehensive way....At best, would-be managers have to be content with an ability to nudge and push a system in a desired direction by shaping critical parameters that can influence the course of system evolution" (1997, p. 272-273).

James Fisher, himself a former president and a long-time commentator on the institution of the presidency, gave voice to the suspicion that constituent-involving processes are in fact an abdication of presidential power and responsibility (1994). "In a misguided sense of democracy" (p. 60), board members, faculty, students, and others are engaged in an "unending and totally unproductive morass of committee meetings, faculty meetings, formal and informal dialogues" (p. 62), leading to paralysis and undistinguished, lowest-common-denominator compromise.

John T. Dever, vice president for academic affairs at Blue Ridge Community College in Virginia, has written (1997) critically of Senge's and others' ignoring or downplaying the role of formal leadership in organizational processes. Dever writes of the the academic arena:

> A president can produce results for weal or woe because he or she occupies an office from which force can be leveraged throughout the organization....The leader must design, teach, husband, and deploy resources; but at times, he or she must energize the organization(p. 60).

Further:

> Presidents and senior administrative staff leading these educational enterprises will need to be comfortable with fluid organizational dynamics....However, they also will need to be prepared to intensify their leadership efforts when they must advocate forcefully, maneuver deftly, and, as required, do battle on both internal and external fronts" (p. 62)

I would suggest that the president active in the promotion and advancement of strategic planning may be seen, in the language of chaos theory, as a strange attractor, a basic element in the formation of a system's patterns. He or she can speed or slow the process, give or deny it legitimacy, and provide energy to the process when necessary.

Ultimately, the president can be empowered by the process. He or she should have a more clearly defined mandate, and should be able to make decisions, hire and fire personnel, allocate resources, commence and terminate programs. The president should draw power, a greater level of consensus, and support for great operational leaps if he or she can tie decisions to the institution's goals and visions emerging from the chaos-informed planning process.

Keller (1997) noted specific, critical points for presidential intervention in and direction of the planning process, regardless of the openness of that process. The president needs to make a compelling case for the need for a strategic plan. The president needs to lay out a plan for the plan: a timetable and outline or nature of what is expected in the final product. The president or other respected campus leader need to be prepared to step in and reenergize or direct planning processes that are stalled or sidetracked. The president should be prepared to produce timely implementations from the planning process, even while it is in progress, in order to contribute to the sense of urgency and empowerment. Finally, the president, once basic strategic directions are agreed upon institutionally, should be prepared to compel compliance and cooperation, to turn from the carrot to the stick.

Peter Fairweather (1997) advocates that the president and other leaders can sustain and energized institutional transformation through "small wins" in numerous areas. This makes change conceivable, palatable, and realistic for those massive change too huge and abstract to comprehend. Further small, successful change enables people to support larger-scale change going in a similar direction.

However, the "strong" president, one who acts in virtual sole proprietorship of power, one who enforces his or her will with scant regard for opposition, feedback or organizational attractors, has the potential to become an attractor of a different sort--a point attractor. Like a pendulum swirling toward a point of rest, the patterns of the institution become tighter and tighter, tending toward inertia. Feedback is of a different sort: lowered morale and commitment, leading to more rules and regulation, in a cycle that quickly overcomes all other dynamic inputs to the system. The actors on the scene become resigned to treading water instead of making waves (Platje & Seidel, 1993). Bensimon and Neumann (1993) describe the circumstance of the president prone to action without consultation as contributory to

an executive staff which is given to only going through the motions of deliberation among themselves and with the president. Tierney (1992) encouraged us to view leadership, in planning and in broader contexts, more in terms of "facilitation" than "direction....Leaders create the conditions for dialogue rather than acting as if they are the ones who define the reality of the organization" (p. 19).

It would seem rather critical that any model of any significant aspect of organizational function would devote substantial attention to the role of the executive. As Harvey (1998) writes, "effective leadership...is indispensable in guiding a campus through the treacherous waters of strategic planning....[L]eadership is the capstone" (p. 7).

The Case Studies and Proposition 8: "To work here before and after the plan are two different things," said a staff member at Carson-Newman College. "My perception is that people were afraid. Nobody would move without getting presidential authorization. People were in a reactive mode. Now it's much more of a team effort."

Cordell Maddox had been Carson-Newman's president for ten years when Keller was contracted for the planning effort. "We really turned him loose," recalled Maddox. "I had made the decision that this was not going to be Maddox's plan. I was not going to try to impose my thinking." In the course of the Keller meetings, "They never met with me," recalled Maddox, but only gave him a draft final report to read. "They said I had the opportunity to change anything. I said there were a couple of things, but I wasn't going to change one sentence. I insisted it be their document." Maddox's said the document gave him and the institution the power "to be bold and take a chance." He credits the document with giving him the rationale to greatly improve staff benefits, even before specific funds were created to support it. A faculty member says "there's a remarkable synergy between President Maddox and the plan."

President Perkins at Blue Ridge credits the planning process with giving him authority to move the institutional payraise policy to a complete merit system (as opposed to across-the-board), and to combine key positions in unconventional ways to redistribute funds and improve services, among other examples. He notes that "there's a dangerous rail that a president walks when there's as much involvement as we have at our college....But you have to build trust. If a president is above the institution, if he acts without a foundation of trust, then I think it's a shallow foundation for leadership." He added, "I have created for myself, and the institution has created for me, permission to take some large leaps every once in awhile, provided that I can connect it back to our values, our visions, our directions." The metaphor of chaos theory, said another administrator, "allows for varying degrees of tight control and loose control depending on the particular situation....It's a balancing act....It's the nature of an organization of highly intelligent, highly self-directed people, and the kind of organization that encourages that."

An administrator at the University of Calgary considered that balance another way: "One of the paradoxes is that a lot of people look to the administration for so-called leadership. But they'd kneecap anyone who didn't observe the democratic and collegial processes that they hold dear. That can stand in the way of change....But it's possible to both show leadership and observe democratic traditions. There are just junctures when somebody has to make a call."

Excessive tightness on the administrative reins as a solution to environmental and budgetary challenges caused one Calgary planner to observe:

> I think 'toughness' in decision making is a common mistake that is used in place of rethinking and reconceptualizing an organization. My opinion is that conventional strategic planning tended to be linear and rigid and fixed, and quite inappropriate, but that doesn't mean it gives way to simply hard decision making. Universities need to reconceptualize their unique role in a postsecondary system..., a postindustrial world. Hard-nosed decision making can help you cut your overhead. But then you're left with the same basic cultural problems. You're smaller and you've still been passed by.

Red Deer's problems in the spring of '97 were in no small part attributable to the disability of

the president to make decisions or enter meaningfully into the decision-making processes. "It made our position much more difficult," said one administrator. Another said the de facto leaders of the college were doing a good job under the circumstances, but "we're hurt....They're not the president."

Proposition 9: That which can be quantified is not to be overvalued, and that which cannot be quantified is not to be discounted. Much of the circumstance of unpredictability comes from our inability to discern which factors in our environment, which "butterfly wings," will be absorbed by the most powerful dynamics of the system, and which will gain great power, from iterative dynamics, far out of proportion with the seeming insignificance of their genesis. The American G.I. Bill was such a butterfly wing. The bill's most ardent supporters in the closing days of World War II believed its promise of unemployment benefits for veterans to be the bill's most significant feature. Few thought that many returning veterans would take advantage of the bill's educational benefits. Yet more than 2 million veterans jumped at the chance to attend college. More significantly, access to higher education in America was transformed, in the public's mind, from a privilege for the few to an entitlement for virtually all people (Kiester, 1994).

None of the contributing factors to the effects of the G.I. Bill were identified, except in retrospect, by quantification. On the other hand, over-dependence upon quantification has yielded incorrect conclusions. The dominant "fact" of the planning future going into the '80s was a declining pool of potential students, which would result in the closing of at least 10%, and perhaps as many 25%, of America's colleges and universities in the decade then ahead (Keller, 1983). The realized future was an increase in college enrollments through the '80s, and the survival of the great majority of the institutions placed on death watch. Linear planners perhaps took too few factors into account, including the power of institutional creativity and adaptability. Such planners are heavily dependent for their projections upon that which can be more easily quantified (Wheatley, 1992; Frances, 1989).

Over-reliance upon quantifiable data, and the concurrent under-consideration of such elements as opinion, desires, and ambitions was put into perspective by Albert Einstein: "Not everything that counts, can be counted; and not everything that can be counted, counts" (Marino, 1995, p. 218).

The Case Studies and Proposition 9: The separation of genuine institutional planning from merely meeting the reporting and forecasting requirements of government agencies can prove conceptually and practically difficult. "There's a godliness about quantification with some people," said a faculty member at Calgary. At Blue Ridge Community College, however, a planner noted that "there's a place for numbers. [But] our strategic directions flow from our values, not numbers. Numbers keep coming into the equation, but we keep coming back to where you want to be. You have to identify your values as an institution before you can take on this process."

It was at Blue Ridge where the limitations of quantification had been most broadly considered. "I like things to be pretty precise," said an administrator at BRCC, "but I know that some of these things we can try to measure and kill by the very act of measurement." He had been at institutions where benchmarking of plans was all numerically based,

> and opportunities arose and you ignored them because you didn't think of them six months earlier. You have to be nimble and flexible. I'm not so much interested in measurable as continual process growth. That's not to say that there are some things you don't need to have numbers for, but I think people knowing it—sensing it—is much more important than proving it.

"We're tax-supported," said another administrator, and the difficulty of trying to correlate a values- and aspiration-driven planning process with state reporting requirements based on numbers. "It's like trying to nail Jello™ to the wall." Another planner noted the difficulty of completing application forms for a Title III grant. "It's ridiculous. They want to know what exactly you're going to be doing with [funded] technology in five years. But at least they know it's ridiculous. They let you revise it every year."

Numerical dependency is not to be confused with objectivity. The protagonists in the program-reduction confrontations at Red Deer College both asserted their positions through numerical

evidences—and still reached radically different conclusions. Unexamined or unrevealed were the philosophic or directional imperatives underlying the selection or interpretation of those numbers; what many people considered vital programs at the heart of the institution, an administrator called "a cancer. You've got to cut off the cancer so the whole can survive." When faced with a number that didn't compute into the model—some 4,500 people signing a petition in support of a music program on the chopping block—an administrator concluded that "if you called those people up they would have no idea what petition they signed."

Proposition 10: The future is a creation, not a prediction. This power of agency is the distinguishing context of human chaotic systems. Despite the difficulty of prediction, the certainty of uncertainty, it would be a grave error to take from chaos theory the idea that planning is futile, because the future is unpredictable. Rather, the primary lesson is that the future can be created. Conventional, linear planning is based largely on the assumption of high predictability. Linear planning puts an emphasis on trend lines, projecting them into the future, and tends to make insufficient accounting for the influx of turbulence, foreseen or not. Linear planning postulates a future far over the horizon, but it is rarely realized in any recognizable form. Directors of linear planning attempt to execute the future less than they attempt to create it, and they are often wrong. Priesmeyer, a proponent of nonlinear management, described "forecasting," a linear approach, as (p. 176) "the process of using historical data exclusively to make estimates of the future." Such approaches, he added, fail to recognize the presence of free will, and are therefore "naive for any system in which humans participate." Mintzberg touches upon this in his description of the "grand fallacy" of strategic planning: "Because analysis is not synthesis, strategic planning is not strategic formulation" (1994, p. 321). Analysis is decompositional, according to Mintzberg, and is therefore incapable of the creation of novel strategies.

Peterson encourages us to regard the future and the environment as "complex but malleable" (1997, p. 134). But the ability to make long-term changes in the future is dependent upon our willingness, as actors within the university or social system, to make "long-term commitments" and to apply "consistent effort" toward desired ends (p. 153). Peterson specifically distinguishes this from a strategic planning perspective which places a higher premium over environmental evaluations and scanning, as opposed to desired outcomes.

Participants in nonlinear planning, by contrast to linear planners, come to realize that the future is an invention; the external and internal environments are strong creative elements of the future, but so are dreams, values, and ambitions. Metaphorically, the flutter of a wing can move not only the breeze but the system, particularly if applied with consistency and in partnership. These "small" elements gain power over time, and can overcome substantial resistance.

The Case Studies and Proposition 10: "The future is not a specific," said a Calgary faculty member. "It is not an identifiable entity. It's not random, but it is a creation." Even in the absence of financial challenges, said another Calgary faculty member, strategic planning

> would be the right thing to do. I take the view that we're entering a new era, and that we'll enter several new eras in my lifetime. There's no point in embarking on a process that leads to another kind of ossification....We set about the [planning process] with the kind of idea that we had certain encumbrances of a financial kind. Once we got going, the fertility of ideas that we were confronting almost every time we met simply took over and people, instead of being negative about the whole process, turned into people who were thinking original thoughts. They were enthusiastic. They were optimistic.

The feeling at Blue Ridge is that the future can be leveraged with commitment and input at key points. The creation of endowment funds and strategic initiative monies, ideas growing out of planning, can be significant. An administrator boiled down the institutional budget to a small amount of truly "discretionary" funding. "If you look at the truly discretionary funds we have, and we tack $100,000 a year onto that, that's significant." "We've been able to be creative" with funds, said another BRCC

administrator. "That's given us a lot of freedom." A staff member said the commitment generated by participative and creative planning "just blew me away....Everybody says, 'This is our destiny. This is where we want to be in ten years.'"

Summary

The case studies do not "prove" the metaphor, and not are asserted to. That effort would be beyond the nature and strength of any metaphor. However, I believe that the metaphor finds substantial real-world enrichment through the planning experiences of those in the case-study institutions. Where there is a *general* alliance of planning practice with the propositions, there is a *general* sense of planning success or progress toward it. Where practice is at *general* odds with the propositions, there is a *general* tendency toward difficulty or failure in the planning process. This is not a particular surprise, as the propositions are derived in large from sound sources and long experience of others in planning. But the strength of the metaphor gives conceptual coherency to the principles embodied in the propositions, and the metaphor presents a workable alternative to planning practices and to metaphors less likely to lead to ultimate success.

Consistent with qualitative research, these four cases are not put forth as a "sample" of any sector or sectors of postsecondary education. Yet their variety does suggest that the propositions and metaphor have power over a variety of circumstances. Testing of the propositions and their principles in other circumstances, within education and beyond, would be of help in making the metaphor more robust or in contributing to its modification. Further, parallel quantitative study might add dimension to qualitative studies and allow some generalization of these ideas to specific sectors of postsecondary education or particular circumstances within institutions.

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